



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Daniel G. Schweikert, John F. MacDonald  
Assignee: Sun Microsystems, Inc.  
Title: METAL REGION FOR REDUCTION OF CAPACITIVE COUPLING  
BETWEEN SIGNAL LINES  
Serial No.: 09/452,367 Filed: November 30, 1999  
Examiner: Mitchell, James M. Group Art Unit: 2827  
Docket No.: P-3790

Monterey, CA  
July 18, 2002

CLEAN COPY OF REPLACEMENT CLAIMS

Replace the pending set of claims in the above  
application with the following set of claims:

- A1
1. A structure comprising:  
a first signal line;  
a second signal line; and  
a first shield line positioned between but separated from  
said first signal line and said second signal line, said first  
shield line being electrically floating.
  2. The structure of Claim 1 wherein said first signal  
line, said second signal line and said first shield line are  
all part of a single conductor layer.
  3. The structure of Claim 1 wherein said first signal  
line, said second signal line, and said first shield line are  
each in a different conductor layer.

4. The structure of Claim 1 wherein said first shield line has an area sufficient to prevent said first shield line from causing capacitive coupling between said first signal line and said second signal line to be greater than if said first shield line was not present.

5. The structure of Claim 1 wherein said structure further comprises a second shield line electrically connected to said first shield line.

6. The structure of Claim 5 wherein said first shield line and said second shield line are part of a single conductor layer.

7. The structure of Claim 5 wherein said first shield line is part of a first conductor layer and said second shield line is part of a second conductor layer.

8. The structure of Claim 5 wherein said first shield line is electrically connected to said second shield line by an electrically conductive via.

9. The structure of Claim 8 wherein said via is provided at a natural intersection of said first shield line and said second shield line.

10. (AMENDED) A structure comprising:  
a substrate;  
a first signal line above said substrate;  
a second signal line above said substrate, wherein unused substrate surface area exists between said first signal line and said second signal line; and  
a first shield line in said unused substrate surface area, said first shield line being electrically floating.

Cont'd  
A1

11. The structure of Claim 10 wherein a distance between said first signal line and said second signal line is at least equal to twice the minimum distance allowable between features plus the minimum allowable width of a feature.

12. The structure of Claim 10 wherein said first shield line has a width greater than the minimum allowable width of a feature.

14. The structure of Claim 10 wherein said first shield line has a first portion and a second portion, said first portion having a greater width than said second portion.

15. The structure of Claim 10 wherein said structure further comprises a second shield line electrically connected to said first shield line.

A2

16. (AMENDED) A structure comprising:  
a substrate;  
a first signal line above said substrate;  
a second signal line above said substrate, wherein unused substrate surface area exists between said first signal line and said second signal line;  
a first shield line in said unused substrate surface area and;  
a second shield line electrically connected to said first shield line, wherein said first shield line and said second shield line are part of a single conductor layer.

17. The structure of Claim 15 wherein said first shield line is part of a first conductor layer and said second shield line is part of a second conductor layer.

18. The structure of Claim 15 wherein said first shield line is electrically connected to said second shield line by an electrically conductive via.

19. The structure of Claim 18 wherein said via is provided at the natural intersection of said first shield line and said second shield line.

20. The structure of Claim 15 wherein said second shield line is a power or ground line.

21. A method comprising:  
forming a first signal line and a second signal line above a substrate;  
forming a first shield line positioned between but separated from said first signal line and said second signal line, said first shield line being electrically floating.

22. The method of Claim 21 further comprising shielding said first signal line from said second signal line with said first shield line.

23. The method of Claim 22 further comprising changing a voltage on said first signal line, a voltage on said first shield line remaining relatively stable.

24. The method of Claim 21 wherein said first shield line is electrically connected to a second shield line.

25. (AMENDED) A method comprising:  
defining a signal line layout comprising a plurality of signal lines;  
defining any area of said signal line layout which is not one of said plurality of signal lines as unused area; and

defining at least one shield line in said unused area, said at least one shield line being electrically floating.

26. The method of Claim 25 wherein said at least one shield line is defined as a first portion of said unused area which is located at a distance at least equal to the minimum distance allowable between features away from any one of said signal lines.

27. The method of Claim 26 wherein said at least one shield line has a width at least equal to the minimum allowable width of a feature.

28. The method of Claim 26 wherein said at least one shield line has a width greater than the minimum allowable width of a feature.

29. The method of Claim 26 wherein said at least one shield line has a first portion and a second portion, said first portion having a greater width than said second portion.

31. The method of Claim 26 further comprising electrically connecting said at least one shield line to a power or ground line.

32. The method of Claim 26 wherein said at least one shield line comprises a first shield line, said first shield line being electrically connected to a second shield line.

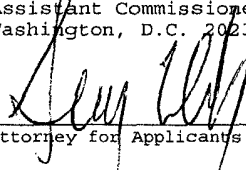
33. The method of Claim 32 wherein said first shield line is part of a first conductor layer and said second shield line is part of a second conductor layer.

cont'd  
A3

34. The method of Claim 33 wherein said first shield line is electrically connected to said second shield line by an electrically conductive via provided at the natural intersection of said first shield line and said second shield line.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on July 18, 2002.

  
\_\_\_\_\_  
Attorney for Applicants

July 18, 2002  
\_\_\_\_\_  
Date of Signature